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SOAPS

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SOAPS

A PRACTICAL MANUAL OF THE MANUFACTURE OF DOMESTIC, TOILET AND OTHER SOAPS

BY

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CHAPTER IV.

PERFUMES.

In the scenting of soaps, etc., and in the preparation of perfumes, there are employed essential oils and other substances derived from a great variety of products. The preparation of the essential oils is a comparatively simple process, although to obtain the best product great care has to be taken in the selection of materials, and in carrying out the operations involved in extracting the oil or essence; thus it is impossible to obtain a fine oil of violets from faded flowers, and otto of roses of the finest fragrance can only be obtained from flowers which are just ripe. Generally the oils are obtained either by pressure in a screw press or by distillation with steam, the oils in general possessing the same property as turpentine of being distilled over boiling water or in a current of steam.

Those oils which are mostly in use for perfumery purposes are described in the following brief notes, which for the sake of convenience are arranged alphabetically:—

Anise.—This is obtained from the seed of *Pimpinella anisum*, a plant which grows over a wide extent, and is exported from Russia, Thuringia, Moravia, Chili, Spain, Levant, etc. The yield of oil ranges from 1·3 per cent. to 3 per cent., Levant giving the smallest, and Spanish anise the largest yield. Slight differences are observable in the odour of the oil from seed grown in different localities. It is colourless or at most a faintly yellow oil when fresh. On being kept, especially when exposed to the air, it becomes dark

yellow in colour. Badly made and inferior oils may also possess this dark colour. It has a pleasant odour, and an aromatic sweet taste. It solidifies at 50° to 59° F. on account of its containing a stearoptene known as anethol. On exposure to air anethol is converted into anisic aldehyde with some resinification, oxidation taking place. Its specific gravity is 0·980, and it is soluble in an equal volume of alcohol. This oil must not be confounded with oil of star anise, with which it is often adulterated. Sometimes other oils are added, together with a little paraffin or spermaceti, to bring about the solidifying of the adulterated oil at lower temperatures.

Bergamot.—This is obtained from the rind of the fruit of the *Citrus limetta*, a species of lemon, which yields about 3½ per cent. of the oil. When fresh it has a pale yellow colour, but may often be met with of a greenish tint, which is due to its having been kept in a copper vessel. It has a strong and agreeable odour. Its specific gravity varies from 0·850 to 0·980; it boils at 118° C. and solidifies at 11° F. It dissolves freely in alcohol. Bergamot oil contains terpenes, linaloöl acetate, and a small quantity of linaloöl. The linaloöl acetate is the odorific principle, and is present to the extent of 40 per cent. and upwards. It can be estimated by means of Koettstorfer's saponification test.

As adulterants refined turpentine oils, or oils derived from oranges and lemons, with rosin are used.

It is advisable to keep it out of contact with air, as it absorbs oxygen, and thereby loses its odour, acquiring that of turpentine. Oil of bergamot is largely employed in the perfuming or scenting of soap.

Oil of Bitter Almonds.—This oil is obtained from the fruit of the *Amygdale amare*, or bitter almonds. The fruit is pressed to separate out all the oil it contains, then the meal is mixed with water, and warmed to 106° to 113° F.

for some hours; a fermentative action sets in, and a vegetable principle, amygdalin, present in the meal, reacts with other constituents and forms the oil together with some sugar and prussic (hydrocyanic) acid. To obtain the oil the fermented meal is distilled, 1 per cent. being the usual amount obtained. When pure it is a colourless, very refractive liquid, having a specific gravity of 1·04, so that it is slightly heavier than water. It boils at 180° C. (350°F.). On exposure to the air the oil gradually undergoes decomposition, and is changed into benzoic acid; hence it must be kept in air-tight vessels. Bitter almond oil is employed to a limited extent in the making of perfumes, but not in scenting soaps, the almond-like odour of which is commonly obtained by using what is known as myrbane (nitro-benzol).

Oil of Caraway.—This is obtained from caraway seeds, which are well known to cooks and confectioners, who delight to add them to their cakes. These are the seeds of the tree *Carum carui*, which is cultivated in various parts of Germany and Holland, while it is found wild in Norway and Russia. The average amount of the oil which can be obtained is 5 per cent., but it is curious that the seeds from the wild variety yield 1 to 2 per cent. more oil than the seeds from the cultivated varieties. Caraway oil has a light yellow colour, and an aromatic odour and burning taste; its specific gravity is 0·960, and it boils at 195°C. (383° F.). It is largly employed in the scenting of soaps, both alone and in combination with other essential oils. Its odour is due to an aldehyde known as carvol.

Cassia.—This oil is obtained from both flowers and the wood of the tree *Cinnamomum cassia*, the former yielding about 2½ per cent. of the oil, the latter only about ¼ per cent. Oil of cassia when fresh is of a yellow colour, but on keeping it becomes of a dark-brown colour. It has a specific gravity of 1·06 and boils at 252° C. (485° F.). It has a pleasant

odour not unlike that of cinnamon, but by no means so pleasant. It has a sharp taste, and is employed in the scenting of soap and in the preparation of many perfumes.

CINNAMON.—This oil is obtained from the wood of the cinnamon laurel, *Cinnamomum zeylanicum*, which grows very extensively in China and Ceylon. The wood yields from 1 to 1½ per cent. of oil. Three varieties are recognised in commerce—Ceylon oil of cinnamon, Chinese oil of cinnamon (which is also known under the name of cassia oil), and oil of cinnamon leaves, the first being regarded as the true "oil of cinnamon". This oil is rather viscid, of a golden-yellow or a golden-brown colour, according to the age, and has a burning but sweet taste. The specific gravity is 1·030, and it boils at 240° C. (464° F.), while at 21° C. (−6° F.) it solidifies. On exposure to the air it absorbs oxygen, becoming thicker, darker in colour, while its flavour deteriorates. The principal constituent is cinnamyl aldehyde.

Chinese oil of cinnamon has a specific gravity of 1·065, and contains about 75 per cent. of the aldehyde. It used to come over very largely adulterated with rosin, etc., but now it is sent over fairly pure. It is not equal in quality to Ceylon oil.

Oil of cinnamon leaves is a very inferior article, used for adulterating the better grades of oil, and in scenting soaps. This oil is rather heavier (its specific gravity being 1·053) than Ceylon oil, although not so heavy as the Chinese oils.

Oil of cinnamon is largely employed in the preparation of perfumes, and in scenting soaps, etc.

CITRONELLE.—In India and Ceylon are grown many species of grass-like plants, which yield oils having an aromatic odour. The oils from these are commonly known as grass oils, of which the following are the chief: citronelle, lemon grass, vetiver, ginger grass. Citronelle is obtained from the grass *Andropogan nardus*, largely grown in Ceylon,

where the oil is extracted in large quantities, and exported to this country. It has a pale yellow colour; a peculiar, pleasant odour. It is very largely employed in the preparation of perfumes and the scenting of soaps.

CLOVE.—This is obtained from the fruit buds of the clove tree, *Caryophyllus aromaticus*, which comes from Amboina, Bourbon and Zanzibar. These contain about 18 per cent. of oil. When fresh this oil is colourless, but it soon becomes yellowish to brown. It is rather heavier than water, its specific gravity being 1·030, and it boils at 268° C. (478° F.). It has an exceedingly strong burning taste and a pleasant spicy odour; it is largely employed in the scenting of soaps, either alone or in common with other oils.

CORIANDER.—This oil is obtained from the seeds of the coriander plant, *Coriandum satrium*, which yield from to 1 per cent. of the oil. The tree is grown in Russia, Holland, Italy, India, North Africa and other localities. It is of a pale yellow colour, sharp aromatic taste, and pleasant odour. It is rather lighter than water, its specific gravity being 0·875, while it boils at from 150° to 200° C. It is very largely employed in the scenting of soaps.

LEMON GRASS.—This oil is prepared from the lemon grass, *Andropogon citratus*, a native of Ceylon, while it is also cultivated in India. From these countries are exported large quantities of these oils. It is a colourless oil, possessing a pleasing odour of lemon, with a slight reminiscence of that of roses or geraniums; on this account it is often substituted for the oil of rose geranium. It is rather lighter than water, its specific gravity being 0·870 to 0·898; it boils at 220° C. (428° F.) and solidifies at 22° C. (−8° F.). It is very much used in the scenting of soaps and in the preparation of soaps of various kinds.

GERANIUM OR ROSE GERANIUM.—In Southern France and Algiers the *Pelargonium roseum*, or geranium, is very

largely cultivated, and from its leaves is obtained about ¼ per cent. of an odoriferous oil which has an odour not unlike that of roses, hence the reason why this oil is sold as oil of "rose" geranium to replace the true oil of roses, where the cost of the latter oil prevents its use. Oil of geranium has a specific gravity of 0·895, and a boiling point of 220° C. (480° F.). It is very largely used in the making of perfumes and in the scenting of soaps.

LAVENDER.—Probably no perfume is better known than that of the lavender, the flowers of *Lavandala vera*, which is grown very extensively at Mitcham, in Surrey, and in other localities. The flowers yield about 3 per cent. of their weight of oil. The Mitcham oil is considered the best, having the most delicate perfume, and therefore commands the best price. German lavender oil is of good quality, and is cheaper. An oil is also obtained from the spike lavender, *Lavendara spikum*; this however is not so good as the true lavender oil, although it is sometimes supplied in its stead. Oil of lavender has a light yellow colour and a sharp burning taste; it must be kept in air-tight vessels, as otherwise it undergoes decomposition, losing its fine odour of lavender, and acquiring that of turpentine. Oil of lavender is lighter than water, but its specific gravity is very variable, ranging from 0·870 to 0·940, and its boiling point varies from 186° to 192° C. Oil of lavender is much used in the preparation of perfumes, and in the scenting of soaps, etc.

NEROLI.—This is obtained from the flowers of the orange tree and comes from the South of France, where the orange tree is cultivated for this particular purpose. The oils obtained from different species of orange tree vary a little in quality; that from the Seville orange tree, *Citrus vulgaruis*, is considered the best. On exposure to the air they undergo oxidation and become of a red colour; they ought to be kept in a cool place in well-closed vessels. Oil of neroli is colour-